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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09:973,848	10/11/2001	Makoto Taniguchi	110821	7141

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EXAMINER

GONZALEZ, JULIO C

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/973,848

Applicant(s)

TANIGUCHI ET AL.

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C.

121:

- I. Claims 1-6, drawn to voltage regulator, classified in class 322, subclass 28.
- II. Claims 7-11, drawn to voltage regulator, classified in class 322, subclass 24.
- III. Claim 12, drawn to method of controlling power generation, classified in class 318, subclass 121.

2. Applicant's election with traverse of Group I in Paper No. 06/19/03 is acknowledged. The traversal is on the ground(s) that all of the claims are related and would not place an extra search burden. This is not found persuasive because inventions II and III are different from invention I. For example having a method of controlling an alternator by detecting a high voltage pulse larger than a predetermined regulated voltage (different from output power of alternator – claim 3) and exceeding a voltage smaller than a withstand voltage of the rectifier when the pulse appears at an output terminal of the alternator, discriminating a first condition, having a high voltage pulse detector, suppressing the field current only

when the second condition is being discriminated, etc; such features/limitations make the controlling of the alternator different and thus would constitute a different invention.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

1. The drawings are objected to because figure 22, which is a conventional figure, is missing from the drawings. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, a failure detecting means is disclosed, however, it is not clear as to what composes the failure detecting means. The specifications disclose a system in page 9, lines 11-22, page 10, lines 25, 26, which could describe a failure detector. It is

not clear if the failure detecting means is only the timer 67 or is composed of other electronic devices (page 11, lines 5-8).

Also, in claim 6, what is the difference between the failure detecting means and the alarm means (page 13, lines 4-7)? Again, it may seem as if the alarm means is the timer 67, or is the alarm means only the lamp 89?

In order to advance prosecution in the merits, the Prior Art will be applied as best understood by the examiner.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwatani et al (US 5,686,819) in view of Takahashi et al (US 6,121,757).

Iwatani et al discloses a control apparatus for a vehicle having a voltage regulator 3, a switch means 305 connected in series to the field winding 102, a diode 307 connected in parallel with the field winding 102 (see figure 2).

Moreover, Iwatani et al discloses having an alarm system (see claims 5, 8).

However, Iwatani et al does not disclose that the power generation of the alternator may have a longer time than a time constant of the field winding.

On the other hand, Takahashi et al discloses for the purpose of reducing battery voltage drop even when the alternator has a low power capacity that a generation control means may use a time constant, which is longer than that of the field windings (see claim 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a voltage regulator as disclosed by Iwatani et al and to modify the invention by using a time constant larger than that of the field winding for the purpose of reducing battery voltage drop even when the alternator has a low power capacity as disclosed by Takahashi et al.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwatani et al and Takahashi et al as applied to claim 1 above, and further in view of Iwatani et al (US 6,344,734).

The combined controller device discloses all of the elements above. However, the controller device does not disclose having an output voltage of the alternator smaller than the battery voltage.

On the other hand, Iwatani et al (US 6,344,734) discloses for the purpose of attenuating torque load thus improving starting characteristics that the output voltage of the alternator may be smaller than the battery voltage (column, lines 36-39 & figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined controller device as disclosed above and to modify the invention by having the voltage of the alternator smaller than the battery voltage for the purpose of attenuating torque load thus improving starting characteristics as disclosed by Iwatani et al (US 6,344,734).

Allowable Subject Matter

7. Claims 2 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. More specifically, claim 2 has the allowable matter, in combination with all the limitations of claim 1, by stating that the generation control means drives the switch means with a predetermined conductive rate that is smaller than that of the switch means when the failure in the power supply line is detected.


Claim 5 has the allowable matter, in combination with all the limitations of claim 1, having a rectifier with zener diodes having reverse breakdown characteristics and the failure detecting means detect an output voltage of the armature winding or a DC output voltage of the rectifier, and determines the failure when the detected voltage is larger than a regulated value of the output voltage of the alternator and exceeds a predetermined voltage that is smaller than a reverse breakdown voltage of the zener diodes and continues another time that is shorter than the time constant of the field winding.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


BURTON S. MULLINS
PRIMARY EXAMINER

Jcg